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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,829	12/07/2004	Peter Hein	32860-000817/US	7093
30596	7590	06/01/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			MOFFAT, JONATHAN	
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RESTON, VA 20195			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/516,829

Applicant(s)

HEIN ET AL.

Examiner

Jonathan Moffat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-11 and 15-25 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-11 and 15-25 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 19 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendments to the claims and drawings, filed 4/19/2006, are accepted and appreciated by the examiner. Applicant amended the claims and added new claim 25. In response previous objections to the drawings and claims are withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1.

Claims 1, 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guru (US pat 6505966) in view of Gard (US pat 5220589).

With respect to claim 1, Guru discloses an apparatus comprising:

- 1) An X-ray beam source (Fig 1 item 16).
- 2) A radiation detector including a plurality of detector elements (Fig 1 item 15).
- 3) A data acquisition system for reading the electrical signals produced by the detector elements and for processing the signals to form raw data (Fig 1 item 17).
- 4) An image computer arranged downstream from the data acquisition system for receiving the raw data via a data transmission path (Fig 1 item 5 and 7).
- 5) An evaluation device designed for automatic assessment of the quality of the radiation detector and for automated assessment of at least one of the quality of the data acquisition system and the data transmission path (Fig 1 item 10 and column 4 line 64-column 5 line 5).

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Wherein the evaluation device is adapted to perform the following;

- 6) Initiating at least one measurement for production of raw data (Fig 5).
- 7) Calculating, using the raw data, at least one value of the radiation detector (Fig 5).
- 8) Driving a display device to display an evaluation result including the calculated value (Fig 1 item 11 and column 6 lines 20-29).

With respect to claim 4, Guru discloses that the evaluation device is adapted to compare the calculated values with a tolerance limit which is at least one of predetermined and read from a memory (Fig 4, Fig 5 item 126, and Fig 6).

With respect to claim 5, Guru discloses the evaluation result is displayable graphically on the display device (Fig 1 item 11 and column 6 lines 20-29).

With respect to claim 6, Guru discloses a memory device for storage of the evaluation result (Fig 1 item 12 and column 3 lines 32-40).

With respect to claim 7, Guru discloses a further parameter is determinable which is suitable for assessment of the quality of at least one of the data acquisition system, of a component, of a module element, and of a sub-area of the data acquisition system (column 5 lines 1-4).

With respect to claim 8, Guru discloses the parameter is suitable for at least one of assessment of an integrator in the electronics channel, assessment of a monitor channel, assessment of a de-multiplexer, and assessment of an A/D converter (Fig 5 items 132, 136, 140, and 142).

With respect to claim 9, Guru discloses a further parameter is determinable which is suitable for assessment of the data transmission path (Fig 5 items 132-142).

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With respect to claim 1, Guru fails to disclose:

6) Initiating at least one measurement for production of raw data with the X-ray beam source switched off.

7) Calculating, using the raw data, at least one value of a signal offset of the radiation detector.

Gard teaches, with respect to claim 1:

6) Initiating at least one measurement for production of raw data with the X-ray beam source switched off (column 1 lines 60-68).

7) Calculating, using the raw data, at least one value of a signal offset of the radiation detector (column 1 lines 60-68).

It would have been obvious to one of ordinary skill in the art to modify the system of Guru by instructing it to collect measurements while the X-ray beam is off and use that data to calculate the offset as taught by Gard. This would allow the scanner to compensate for offset.

2.

Claims 10, 17, and 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guru and Gard as applied to claims 1, 5, and 9 above, and further in view of Friz (US pat 5786994).

With respect to claims 10 and 25, Guru discloses the evaluation device determines the value of the parameter from the measured raw data.

With respect to claim 17 Guru discloses multiple parameters displayed graphically (Fig 5 and Fig 1 item 11).

With respect to claims 10 and 25, Guru and Gard fail to disclose the evaluation device determines the value of the parameter statistically from the measured raw data.

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With respect to claim 17, Guru and Gard fail to disclose two or more parameters are combined to form a graphical pattern.

Friz teaches, with respect to claims 10 and 25, determining the value of the parameter statistically from the measured raw data (Fig 2 items 36 and 38).

It would have been obvious to one of ordinary skill in the art to look at data trends in the system of Guru and Gard over time in order to analyze them statistically as taught by Friz. This would allow for gradual errors to be detected as well as failure trends.

Friz teaches, with respect to claim 17, two or more parameters are combined to form a graphical pattern (Figs 6a-c).

It would have been obvious to one of ordinary skill in the art to display multiple parameters simultaneously in the system of Guru and Gard as taught by Friz. This would allow for a more compact printout and quicker data reference as well as allow data to be looked at in comparison to other data.

3.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guru and Gard as applied to claim 1 above, and further in view of Peter (US pat 6327330).

With respect to claim 11, Guru discloses that the evaluation device is implemented by use of appropriate software, which is provided in a computer (Fig 1 item 10).

With respect to claim 11, Guru fails to disclose that said computer is fitted away from the gantry.

Peter teaches, with respect to claim 11, said computer is fitted away from the gantry (Fig 1 item 15).

It would have been obvious to one of ordinary skill in the art to position the computer away from the CAT scan gantry of Guru and Gard as taught by Peter. This would allow operation of the device from a distance and allow the performance to be monitored remotely to alert technicians in the event of a problem (Friz Figs 2 and 3).

4.

Claims 2, 15-16, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guru in view of Friz.

With respect to claim 2, Guru discloses an apparatus comprising:

- 1) An X-ray beam source (Fig 1 item 16).
 - 2) A radiation detector including a plurality of detector elements (Fig 1 item 15).
 - 3) A data acquisition system for reading the electrical signals produced by the detector elements and for processing the signals to form raw data (Fig 1 item 17).
 - 4) An image computer arranged downstream from the data acquisition system and for receiving the raw data via a data transmission path (Fig 1 items 5 and 7).
 - 5) An evaluation device designed for automatic assessment of the quality of the radiation detector and for automated assessment of the quality of at least one of the data acquisition system and the data transmission path (Fig 1 item 10 and column 4 line 64-column 5 line 5).
- Wherein the evaluation device is adapted to perform the following;
- 6) Initiating repeated measurements for production of raw data (Fig 5 item 144).
 - 7) Wherein at least one of the drive and setting of the X-ray beam source is automatically changed between the at least two measurements (Fig 5 item 120).

8) Calculating, using the raw data, at least one value of at least one parameter which allows a quality statement about the radiation detector (column 4 lines 65-67).

9) Driving a display device to display an evaluation result including the calculated value (Fig 1 item 11 and column 6 lines 20-29).

With respect to claim 4, Guru discloses that the evaluation device is adapted to compare the calculated values with a tolerance limit which is at least one of predetermined and read from a memory (Fig 4, Fig 5 item 126, and Fig 6).

With respect to claim 15, Guru discloses that the evaluation device is adapted to compare the calculated values with a tolerance limit which is at least one of predetermined and read from a memory (Fig 4, Fig 5 item 126, and Fig 6).

With respect to claim 16, Guru discloses the evaluation result is displayable graphically on the display device (Fig 1 item 11 and column 6 lines 20-29).

With respect to claim 18 Guru discloses multiple parameters displayed graphically (Fig 5 and Fig 1 item 11).

With respect to claim 19, Guru discloses a memory device for storage of the evaluation result (Fig 1 item 12 and column 3 lines 32-40).

With respect to claim 20, Guru discloses a further parameter is determinable which is suitable for assessment of the quality of at least one of the data acquisition system, of a component, of a module element, and of a sub-area of the data acquisition system (column 5 lines 1-4).

With respect to claim 21, Guru discloses the parameter is suitable for at least one of assessment of an integrator in the electronics channel, assessment of a monitor channel,

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assessment of a de-multiplexer, and assessment of an A/D converter (Fig 5 items 132, 136, 140, and 142).

With respect to claim 22, Guru discloses a further parameter is determinable which is suitable for assessment of the data transmission path (Fig 5 items 132-142).

With respect to claim 23, Guru discloses the evaluation device determines the value of the parameter from the measured raw data.

With respect to claim 2, Guru fails to disclose:

6) Initiating at least two measurements for production of raw data.

With respect to claim 23, Guru fails to disclose the evaluation device determines the value of the parameter statistically from the measured raw data.

With respect to claim 18, Guru fails to disclose two or more parameters are combined to form a graphical pattern.

Friz teaches, with respect to claim 2:

6) Initiating at least two measurements for production of raw data (Fig 4).

It would have been obvious to one of ordinary skill in the art to run the process of Guru at least twice as taught by Friz. This would allow statistical analysis of the data, allowing for gradual errors to be detected as well as failure trends.

Friz teaches, with respect to claim 18, two or more parameters are combined to form a graphical pattern (Figs 6a-c).

It would have been obvious to one of ordinary skill in the art to display multiple parameters simultaneously in the system of Guru and Friz as taught by Gard. This would allow

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for a more compact printout and quicker data reference as well as allow data to be looked at in comparison to other data.

Friz teaches, with respect to claim 23, determining the value of the parameter statistically from the measured raw data (Fig 2 items 36 and 38).

It would have been obvious to one of ordinary skill in the art to look at data trends in the system of Guru over time in order to analyze them statistically as taught by Friz. This would allow for gradual errors to be detected as well as failure trends.

5.

Claims 3 and 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guru and Friz as applied to claim 2 above, and further in view of Peter.

With respect to claim 3, Guru discloses a parameter that describes the spectrum and signals of the device.

With respect to claim 24, Guru discloses that the evaluation device is implemented by use of appropriate software, which is provided in a computer (Fig 1 item 10).

With respect to claim 3, Guru fails to disclose that the parameter describes at least one of spectral linearity and signal linearity of the radiation detector.

With respect to claim 24, Guru fails to disclose that said computer is fitted away from the gantry.

Peter teaches, with respect to claim 3, correcting one of spectral linearity and signal linearity of the radiation detector (column 2, 1st paragraph).

It would have been obvious to one of ordinary skill in the art to modify the system of Guru and Friz to determine parameters related to spectral or signal linearity as taught by Peter.

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This could be accomplished by modifying the associated control software. This would allow the system to correct for such errors or else report failure of those parts responsible.

Peter teaches, with respect to claim 24, said computer is fitted away from the gantry (Fig 1 item 15).

It would have been obvious to one of ordinary skill in the art to position the computer away from the CAT scan gantry of Guru and Friz as taught by Peter. This would allow operation of the device from a distance and allow the performance to be monitored remotely to alert technicians in the event of a problem (Friz Figs 2 and 3).

Response to Arguments

Applicant first argues on pages 10-12 against the combination of reference Guru and Gard. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, although Gard discloses an alternative method to collecting measurements with the beam off, Gard also establishes as previously known and therefore obvious in the art the method of collecting data with the beam off. Gard further provides motivation to collect data with the beam off (column 1 lines 63-68) which would be the same as the motivation to modify reference Guru.

Applicant argues on page 13 that reference Guru does not disclose the limitation of automatically adjusting beam and device parameters between measurements. The examiner first draws the applicant's attention to figure 5. In this figure, step 120 depicts adjusting the settings for the test. After data is collected, step 144 sends the device through another cycle by repeating the flowchart, thereby repeating step 120 and selecting new parameters for further data.

Although it is not specifically stated that Guru adjusts these parameters automatically, it would have been obvious to one of ordinary skill in the art to do so. Automatic and computer control of settings, especially during testing and system restarts is common in the art to increase the speed and repeatability of the process. It has been ruled that merely using a computer to automate a known process does not by itself impart nonobviousness to the invention, *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193,194 (CCPA 1958).

Further, applicant argues on page 14 that the inventive method is faster and therefore distinguished from the prior art. Although this may or may not be true, it is not part of the claimed invention nor is the assumption of superior performance sufficient to differentiate an invention from the prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

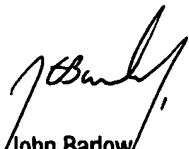
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Moffat whose telephone number is (571) 272-2255. The examiner can normally be reached on Mon-Fri, from 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

5/15/06

JM


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